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**St Aloysius College (Autonomous)
Mangaluru**

Semester IV – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

April - 2025

Nutritional Biochemistry

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PG DEPT.

MANGALORE-575 003

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. What are prostaglandins? Write its importance.
2. Write the fate and formation of pyruvate.
3. Write the classification of hormones.
4. Write a short note on functions of proteins.
5. Write a short note on thyroid hormones.
6. Write the classification of lipids with examples.
7. Write a short note on isoenzymes.

II. Answer any FOUR of the following:

(4x7=28)

8. Illustrate and explain the metabolism of glycogen.
9. Explain DNA replication and enzymes involved.
10. Elucidate the biosynthesis of hormones.
11. Write a detailed note on the classification of enzymes and its nomenclature.
12. Evaluate the importance of coenzymes and cofactors in the catalytic activity of enzymes. Provide examples of how these molecules participate in specific enzymatic reactions.

III. Answer any TWO of the following:

(2 x12=24)

13. What is bioenergetics? Illustrate and explain Biological Oxidation and Electron Transport Chain.
14. Illustrate and explain the formation and removal of ammonia.
15. Illustrate and Discuss the beta oxidation of fatty acids.

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Community Nutrition

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

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(6x3=18)

1. Write a short note on nutrition transition.
2. Provide two examples of interventions that public nutritionists may implement to address community health concerns.
3. Compare the advantages and disadvantages of random sampling surveys and cluster sampling surveys in nutritional assessment.
4. What is the role of public health nutritionist?
5. Provide a brief explanation of the importance of evaluation in the context of nutritional counseling. Name two evaluation methods that can be employed.
6. Write short notes on the domains of nutritional diagnosis.
7. Define IEC.

II. Answer any FOUR of the following:

(4x7=28)

8. Describe the Corporate Social Responsibility (CSR).
9. Elucidate the referral guidelines of individuals to the respective feeding centers based on related indicators.
10. Discuss in general the Government and non-governmental Approaches and strategies for improving nutritional status and health in India.
11. Illustrate and explain linear models of communication.
12. Discuss the use of different teaching methods used in the Nutrition Education.

III. Answer any TWO of the following:

(2 x12=24)

13. Explain in detail on indicators of health and nutrition.
14. Discuss nutritional assessment and surveillance in an emergency-affected population and elaborate on food aid requirements.
15. Compare and contrast between the principles of fortification and genetic improvement as approaches to food intervention. Evaluate the programs aimed at food fortification and genetic improvement with examples.

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April - 2025

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Sports Nutrition

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. Identify and explain three short-term physiological responses that occur during the initial stages of aerobic exercise.
2. Enumerate two key nutritional components essential for athletes in intermittent sports. Provide examples of sports falling under this category.
3. Brief a note the female triad.
4. What is the importance of carbohydrate counting and glycemic control in managing nutrition for individuals with diabetes during exercise.
5. Discuss the potential impact of inadequate carbohydrate intake on endurance performance. Provide examples of symptoms that athletes may experience.
6. Identify three minerals crucial for optimal work performance. Explain how deficiencies in these minerals can impact physical fitness.
7. Name three types of sports injuries. What are the common sports injuries?

II. Answer any FOUR of the following:

(4x7=28)

8. When shall be protein supplementation recommended for strength athletes- justify your stand.
9. Analyze the impact of mindset on dietary choices and athletic performance.
10. Analyze the role of dietary Protein in promoting muscle growth in strength training. Discuss the optimal ratio of dietary Protein for strength athletes.
11. Explain the concept of overtraining syndrome. Describe the signs, symptoms and consequences of overtraining.
12. How does age and training intensity of young athletes influence their dietary requirements? Discuss the challenges that veteran athletes may face in meeting their nutritional needs and how these can be addressed.

III. Answer any TWO of the following:

(2 x12=24)

13. How energy requirements are calculated for athletes? Explain important factors of Exercise /training that affect energy requirements.
14. Explain the concept of EPOC and its relationship to exercise intensity duration and type. Discuss the implications of EPOC for weight management.
15. Develop a nutrition-focused rehabilitation program for a weightlifter recovering from a shoulder injury, emphasizing nutrient timing and supplementation to support muscle repair and joint health.

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Semester IV – P.G. Examination – M.Sc. Food Science Nutrition and Dietetics

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FOOD SAFETY AND QUALITY CONTROL

Time: 3 hrs.

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Max Marks: 70

I. Answer any SIX of the following: (6x3=18)

1. Differentiate between physical, chemical and microbial hazards in food.
2. Write a short note on the role of FSSAI in ensuring food safety.
3. Define food adulteration and briefly explain its significance in public health.
4. Identify and briefly explain three basic principles of Good Hygienic Practices that are applicable in food handling and processing.
5. Discuss the role of employee training in maintaining hygiene standards in food production facilities.
6. List the important principles of total quality management.
7. What is the primary objective of the IPM (Integrated Pest Management), and how does it contribute to ensuring the safety and quality of food products on a global scale?

II. Answer any FOUR of the following: (4x7=28)

8. Discuss on the importance of traceability in ensuring food safety.
9. Discuss the significance of cleaning and sanitation schedules in food establishments. Explain how cleaning schedules are developed based on factors such as equipment usage, production schedules, and sanitation requirements.
10. Classify pest in the context of food safety. Provide examples of common pests found in food processing and storage facilities. Additionally, outline the potential risks associated with pest infestations in these environments.
11. Describe BIS (Bureau of Indian Standards) in detail.
12. Explain the SOPs process and their significance in the food industry.

III. Answer any TWO of the following: (2 x12=24)

13. Define food labeling. Discuss the elements of food labels. Explain mandatory and optional nutrients in food labels.
14. Examine the challenges and opportunities in the global implementation of GAP. Discuss the cultural, economic, and regulatory factors that organizations may face when adopting GAP internationally. Elaborate on ISO 14000 and ISO22000 in detail.
15. What is HACCP? Explain the seven principles of HACCP with suitable example. Discuss any challenges or limitations associated with implementing and maintain HACCP in food safety system.